

REMARKS

Claims 1-49 were pending in this application when the present Office Action was mailed (December 15, 2005). In the December 15, 2005 Office Action, the Examiner divided the claims into Group I (claims 1-31 drawn to a polishing method) and Group II (claims 32-49 drawn to an apparatus), and a provisional election was made to proceed with Group I. In this paper, the applicant affirms the election of Group I (claims 1-31) without traverse. As a result, claims 32-49 have been canceled without prejudice to pursuing these claims in a continuation, divisional, continuation-in-part or other application. Claims 1, 5, and 17 have been amended in this paper. Accordingly, claims 1-31 are currently pending.

In the December 15, 2005 Office Action, all the elected claims (1-31) were rejected. More specifically, the status of the elected claims in light of this Office Action is as follows:

(A) Claims 1, 2, 4-7, 11-13, 15-17, 21, 23 and 24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,893,328 to So ("So"); and

(B) Claims 3, 8-10, 14, 18-20, 22 and 25-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over So.

As a preliminary matter, the undersigned attorney wishes to thank the Examiner for engaging in a telephone interview on March 6, 2006. During the telephone interview, the Examiner and the applicant's representative discussed the claimed subject matter and the cited reference. The following remarks reflect and expand upon the points discussed during the March 6, 2006 telephone interview. As such, applicant respectfully requests that this paper also constitute applicant's interview summary.

A. Response to the Section 102(e) Rejection

Claims 1, 2, 4-7, 11-13, 15-17, 21, 23 and 24 were rejected under 35 U.S.C. § 102(e) as being anticipated by So. Even though applicant respectfully disagrees with the bases of these rejections, applicant has amended independent claims 1 and 17 to

further clarify the claimed subject matter. For the reasons discussed below, So does not anticipate the pending claims. Accordingly, the Section 102(e) rejections of these claims should be withdrawn.

Claim 1, as amended, is directed to a method for removing material from a microfeature workpiece. The method includes contacting a microfeature workpiece with a polishing surface of a polishing medium and placing the microfeature workpiece in electrical communication with a first electrode and a second electrode. The first and second electrodes are spaced apart from the microfeature workpiece. The method further includes disposing a polishing liquid between the polishing surface and the microfeature workpiece, moving at least one of the microfeature workpiece and the polishing surface relative to the other, and passing an electrical current through the electrodes and the microfeature workpiece to remove material from the microfeature workpiece while the microfeature workpiece contacts the polishing surface. The method further includes passing at least a portion of the polishing liquid through at least one recess in the polishing surface so that a gap in the polishing liquid is formed and located at least partially in the recess, between the microfeature workpiece and a surface of the recess facing toward the microfeature workpiece. Formation of the gap in the polishing liquid is controlled to achieve a desired electropolishing rate.

So discloses a conductive polishing pad that includes one or more anodes and cathodes formed at or near the polishing surface of the polishing pad. (Abstract). The polishing pad can include anodes 24 that extend higher than both cathodes 26 and insulating elements 32 relative to a polishing surface 12. (Column 6, lines 18-21). The electrode geometry of the polishing pad 10 allows anodes 24 to contact metal layer 18 of substrate 16 while allowing for a small space 70 to exist between cathodes 26 and metal layer 18 of substrate 16. (Column 6, lines 24-28). The space 70 allows electrolytic polishing fluid 20 to flow between metal layer 18 and cathodes 26. (Column 6, lines 29-30). When the space 70 is small, arcing or short-circuiting of the electrical path can occur if the current from the current source 40 is too high. (Column 6, lines 28-31).

Claim 1 is allowable over So because So fails to teach or suggest each and every element of claim 1. For example, assuming that So's space 70 corresponds, at least in part, to the gap of claim 1, So fails to teach or suggest "controlling formation of the gap in the polishing liquid to achieve a desired electropolishing rate." Instead, So discloses controlling the electropolishing rate by changing the applied electrical current density. Further, So teaches away from "controlling formation of the gap" because So suggests that the space 70 may not be suitably manipulated for controlling the electropolishing rate. So discloses that when the space 70 is small, arcing or short-circuiting of the electrical path can occur, which can significantly impede the functionality of the polishing pad. Accordingly, one skilled in the art would not be motivated to modify So's disclosure of controlling the electrical current density to controlling formation of the space 70. Therefore, So fails to disclose each and every element of amended claim 1 and fails to provide any motivation to modify So's teaching to include such elements. As a result, the Section 102(e) rejection of claim 1 should be withdrawn. Claims 2-16 depend from claim 1. As a result, the Section 102(e) rejections of these claims should be withdrawn for the foregoing reasons discussed above and for the additional features of these dependent claims.

Claim 17 has been amended to contain subject matter generally similar to that of amended claim 1. Accordingly, the Section 102(e) rejection of claim 17 should be withdrawn for the foregoing reasons discussed above and for the additional features of this claim. Claims 21, 23 and 24 depend from claim 17. Accordingly, the Section 102(e) rejections of these claims should be withdrawn for the foregoing reasons discussed above and for the additional features of these dependent claims.

B. Response to the Section 103(a) Rejection

Claims 3, 8-10, 14, 18-20, 22 and 25-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over So. Claims 3, 8-10, 14, 18-20, and 22 depend from claims 1 or 17. As discussed above, So fails to teach or suggest each and every element of claims 1 and 17, and as a result, cannot support a *prima facie* case of obviousness with regard to these claims for the reasons discussed above and the additional features of

these claims. Accordingly, the Section 103(a) rejections of these claims should be withdrawn.

Applicant respectfully traverses the Section 103(a) rejections of claims 25-31. Claim 25 includes subject matter generally similar to claims 1 and 17. Claim 25 further includes "controlling relative amounts of material removed ... by controlling an amount of the polishing liquid that is disposed between the microfeature workpiece and the at least one electrode but is not disposed directly between the microfeature workpiece and the polishing surface," which is neither taught nor suggested by So. Instead, So discloses disposing a polishing liquid 20 that is between the microfeature workpiece 16 and the electrodes 24 and 26 directly between the microfeature workpiece 16 and the polishing surface 12 (see e.g., Figures 1-6). As a result, claim 25 is allowable over So because So cannot support a *prima facie* case of obviousness for failing to teach each and every element of claim 25. Claims 26-31 depend from claim 25. Accordingly, the Section 102(e) rejections of these claims should be withdrawn for the foregoing reasons discussed above and for the additional features of these dependent claims.

C. Conclusion

In view of the foregoing, the claims pending in the application patentably define over the applied art. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned representative at (206) 359-6038.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Chen Liang", is written over a horizontal line.

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